

**REMARKS**

Applicants respectfully request further examination and reconsideration in view of the comments set forth fully below. Claims 1-15, 19-35, and 44-51 were previously pending. Within the previous Office Action, claims 1-15, 19-35 and 44-51 were rejected. By the above amendment, Claims 1, 8, 19, 24, 30, 44, 50 and 51 have been amended. Claims 1-15, 19-35 and 44-51 are now pending.

**Rejections Under 35 U.S.C. § 102**

Within the Office Action, Claims 1, 8, 19, 24, 30, 44, 50 and 51 have been rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,438,604 to Kuver et al. (hereinafter "Kuver"). The Applicants respectfully disagree with this rejection.

Kuver discloses a system and method of transmitting digital video data from one isochronous bus to another isochronous bus via an asynchronous bus. [Kuver, Figs. 2 and 3A]. Referring to column 12, lines 54-59 and column 17, lines 38-46 of Kuver, when isochronous data packets are converted into asynchronous protocol format during transmission on the sending side, the headers of each isochronous packet are modified or formatted with asynchronous information. Likewise, when asynchronous data packets are converted back to isochronous protocol format during reception on the receiving side, the headers of each asynchronous packet are modified or formatted with isochronous information. **Neither Figures 2, 3A or 3B nor the cited columns disclose or teach adding a header to the received packet of data thereby forming an extended packet of data. Kuver simply modifies or formats header information to maintain isochrony of transmission of delivery. Kuver does not teach or disclose adding a header to an existing header to inbound data on the receiving side and then storing the extended packet.**

In the cited sections of Kuver, it is taught that the headers are reconstructed for isochronous transmission across the IEEE 1394 bus. [Kuver, col. 12, lines 54-59] Kuver does not teach adding a header to a received packet of data thereby forming an extended packet of data, and then storing the extended packet of data on a media storage device.

In contrast to the teachings of Kuver, the apparatus and method of the present invention receives a received packet of data to be written to the media storage device, **adds a header to**

**the received packet of data thereby forming an extended packet of data, and stores the** extended packet of data onto a media within the media storage device. In one embodiment, referring to Figs. 4A and 4B, a series of source packets 60-63 is generated at a source device 50. The source device 50 then applies source packet headers 68-71 to each of the source packets 60-63, respectively. The source device 50 then splits the combination source packets and source packet headers into data blocks, with each source packet being split into multiple data blocks. Some number of the data blocks are then combined into an isochronous packet and the isochronous header and the common isochronous packet (CIP) header are then applied to the isochronous packet by the source device 50. Once the isochronous and CIP headers are applied to the isochronous data packet, the packet is then transmitted by the source device 50 over the IEEE 1394-1995 serial bus to the media storage device 40 of the present invention. **When the packet is received by the media storage device 40, a meta-data header is added by the media storage device 40 to the received packet. As mentioned above, Kuver does not teach or disclose adding a header to the received packet of data. Instead, Kuver teaches modifying or formatting header information when converting isochronous digital video data into asynchronous network data for transmission at the sending side.**

The independent claim 1 is directed to a method of writing data to a media storage device. The method of Claim 1 comprises receiving a received packet of data to be written to the media storage device, the received packet of data including a packet header, adding a meta data header to the received packet of data thereby forming an extended packet of data, and storing the extended packet of data onto a media within the media storage device. As described above, Kuver does not teach adding a meta header to the received packet of data thereby forming an extended packet of data and storing the extended packet of data onto a media within the media storage device. For at least these reasons, the independent claim 1 is allowable over the teachings of Kuver.

The independent claim 8 is directed to a method of reading data from a media storage device which has previously been stored with header data generated by the media storage device. The method of claim 8 comprises locating a first header data, including a cycle mark value having a pattern, reading a previously stored packet of data following the first header data from a media within the media storage device, the previously stored packet of data including a packet

header, stripping the first header data from the previously stored packet of data thereby forming a retrieved packet of data, and transmitting the retrieved packet of data to another device. As described above, Kuver does not teach stripping the first header data from a previously stored packet including a packet header. Instead, Kuver teaches **modifying** or formatting header information during transmission at the sending side. For at least these reasons, the independent claim 8 is allowable over the teachings of Kuver.

The independent claim 19 is directed to a meta data header added to received packets by a media storage device as the packets are recorded on storage media within the media storage device, each of the received packets including an existing header. The meta data header of claim 19 comprises a cycle mark value including a pattern used to locate cycle boundaries within the received packets and a cycle count value specifying a cycle number of a cycle in which the received packets are received. As described above, Kuver does not teach a meta data header added to a received packet including an existing header. Instead, Kuver teaches **modifying** or formatting header information during transmission at the sending side. Further, Kuver does not teach a meta data header with a cycle mark value and a cycle count value. For at least these reasons, the independent claim 19 is allowable over the teachings of Kuver.

The independent claim 24 is directed to a media storage device. The media storage device of claim 24 comprises means for interfacing configured for receiving a stream of data, thereby forming a received stream of data, and also for transmitting a retrieved stream of data, the received stream of data including packet header data, means for storing data for storing and retrieving the received stream of data, and means for processing coupled to the means for interfacing and to the means for storing for adding meta header data to the received stream of data as the received stream of data is received and providing the meta header data and the received stream of data to the means for storing for recording thereby forming a recorded stream of data, the meta header data including a cycle mark value marking cycle boundaries within the recorded stream of data. As described above, Kuver does not teach adding meta header data to the received stream of data, the received stream of data including packet header data, as the received stream of data is received and storing the header data and the received stream of data. For at least these reasons, the independent claim 24 is allowable over the teachings of Kuver.

The independent claim 30 is directed to a media storage device. The media storage device of claim 30 comprises an interface circuit configured to receive a stream of data, thereby forming a received stream of data, and also to transmit a retrieved stream of data, the received stream of data including packet header data, storage media configured to store and retrieve the received stream of data, and an embedded stream processor coupled to the interface circuit and to the storage media to add meta header data to the received stream of data as it is received and provide the meta header data and the received stream of data to the storage media for recording to form a recorded stream of data, the meta header data including a cycle mark value marking cycle boundaries within the recorded stream of data. As described above, Kuver does not teach an embedded stream processor to add meta header data to the received stream of data, which includes packet header data as it is received. Further, Kuver does not teach providing the meta header data and the received stream of data to the storage media for recording. For at least these reasons, the independent claim 30 is allowable over the teachings of Kuver.

The independent claim 44 is directed to a method of writing data to a media storage device. The method of claim 44 comprises receiving a received packet of data to be written to the media storage device, the received packet of data including a packet header, adding a meta header to the received packet of data thereby forming an extended packet of data, wherein the received packet of data is an isochronous packet of data received over an isochronous channel, and storing the extended packet of data onto a media within the media storage device. As described above, Kuver does not teach adding a meta header to the received packet of data, the received packet of data including a packet header, thereby forming an extended packet of data and storing the extended packet of data onto a media within the media storage device. For at least these reasons, the independent claim 44 is allowable over the teachings of Kuver.

The independent claim 50 is directed to a method of writing data to a media storage device. The method of claim 50 comprises receiving a received packet of data to be written to the media storage device, the received packet of data including a packet header and a common isochronous packet header, adding a meta data header to the received packet of data thereby forming an extended packet of data and storing the extended packet of data onto a media within the media storage device. As described above, Kuver does not teach adding a meta data header to a received packet that includes a packet header and a common isochronous packet header to

form an extended packet of data and storing the extended packet of data onto a media within a media storage device. For at least these reasons, the independent claim 50 is allowable over the teachings of Kuver.

The independent claim 51 is directed to a media storage device. The media storage device of claim 51 comprises an interface circuit configured to receive a stream of data, thereby forming a received stream of data, and also to transmit a retrieved stream of data, storage media configured to store and retrieve the received stream of data, wherein the received stream of data includes one or more received packets of data, each including a packet header and a common isochronous packet header, and an embedded stream processor coupled to the interface circuit and to the storage media to add a meta data header to each received packet in the received stream of data as it is received, thereby forming an extended packet of data, and provide the extended packet of data to the storage media for recording to form a recorded stream of data, the meta data header including a cycle mark value marking cycle boundaries within the recorded stream of data. As described above, Kuver does not teach receiving a stream of data including one or more received packets, each including a packet header and a common isochronous packet header and adding a meta data header to each received packet in the received stream of data. For at least these reasons, the independent claim 51 is allowable over the teachings of Kuver.

### **Rejections Under 35 U.S.C. § 103**

Within the Office Action, Claims 1-13, 19-26, 29-32, 35 and 44-51 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant Admitted Prior Art (hereinafter "the AAPA") in view of U.S. Patent No. 6,012,117 to Traw et al. (hereinafter "Traw"). The Applicants respectfully disagree with this rejection.

Referring to Figure 4A of the present invention, which is designated as prior art, and the accompanying description, the isochronous and CIP headers are **added** to the isochronous data packet **before** the packet is **transmitted** by the source device 50 over the IEEE 1394-1995 serial bus to the media storage device 40 of the present invention. Referring now to Figure 4B, which is in accordance with the present invention, not the prior art, a new header (the meta data header) is **added** by the media storage device 40 **after** the packet is **received** by the media storage device thereby forming an extended packet, and storing the extended packet on a media storage

device. AAPA does not teach or disclose adding a header after the packet is received by a media storage device. Rather, AAPA simply teaches that the isochronous and CIP headers are inserted by the source device **prior to transmission** on the sending side.

As recognized within the previous Office Action, Traw also does not teach adding a header to a received packet of data thereby forming an extended packet of data. Traw also does not teach storing the extended packet of data onto a media within the media storage device. Accordingly, **neither the specification of the present invention which is designated as prior art, Traw nor their combination teach adding a header to a received packet of data thereby forming an extended packet of data and storing the extended packet of data on to a media within the media storage device.**

In contrast to the teachings of the specification of the present invention which is designated as prior art, Traw and their combination, the method of and apparatus for writing and reading time sensitive data within a storage device of the present invention receives a received packet of data to be written to the media storage device, adds a header to the received packet of data thereby forming an extended packet of data, and stores the extended packet of data onto a media within the media storage device. Referring to Figure 4A of the present application, the data packet 80, prior to transmission by the source device 50, includes the Isoch header, the CIP header and the data blocks, as described previously. However, after receipt of the packet of data, the present invention adds the Meta-Data Header 82 (Figure 4B), in contrast to the configuration described in either the specification of the present invention which is designated as prior art, Traw, or their combination. As described above, neither the specification of the present invention which is designated as prior art, Traw nor their combination teach receiving a received packet of data to be written to the media storage device, adding a header to the received packet of data thereby forming an extended packet of data and storing the extended packet of data onto a media within the media storage device.

The independent claim 1 is directed to a method of writing data to a media storage device. The method of Claim 1 comprises receiving a received packet of data to be written to the media storage device, the received packet of data including a packet header, adding a meta data header to the received packet of data thereby forming an extended packet of data, and storing the extended packet of data onto a media within the media storage device. As described

above, neither the specification of the present invention which is designated as prior art, Traw nor their combination teach adding a meta data header to the received packet of data which includes a packet header, thereby forming an extended packet of data and storing the extended packet of data onto a media within the media storage device. For at least these reasons, the independent claim 1 is allowable over the teachings of the specification of the present invention which is designated as prior art, Traw and their combination.

Claims 2-7 are all dependent on the independent claim 1. As discussed above, the independent claim 1 is allowable over the teachings of the specification of the present invention which is designated as prior art, Traw and their combination. Accordingly, the dependent claims 2-7 are all also allowable as being dependent on an allowable base claim.

The independent claim 8 is directed to a method of reading data from a media storage device which has previously been stored with header data generated by the media storage device. The method of claim 8 comprises locating a first header data, including a cycle mark value having a pattern, reading a previously stored packet of data following the first header data from a media within the media storage device, the previously stored packet of data including a packet header, stripping the first header data from the previously stored packet of data thereby forming a retrieved packet of data, and transmitting the retrieved packet of data to another device. As described above, neither the specification of the present invention which is designated as prior art, Traw nor their combination teach generating header data by a media storage device, stripping the first header data from the previously stored packet of data which includes a packet header, thereby forming a retrieved packet of data and transmitting the retrieved packet of data to another device. For at least these reasons, the independent claim 8 is allowable over the teachings of the specification of the present invention which is designated as prior art, Traw and their combination.

Claims 9-13 are all dependent on the independent claim 8. As discussed above, the independent claim 8 is allowable over the teachings of the specification of the present invention which is designated as prior art, Traw and their combination. Accordingly, the dependent claims 9-13 are all also allowable as being dependent on an allowable base claim.

The independent claim 19 is directed to a meta data header added to received packets by a media storage device as the packets are recorded on storage media within the media storage

device, each of the received packets including an existing header. The meta data header of Claim 19 comprises a cycle mark value including a pattern used to locate cycle boundaries within the received packets and a cycle count value specifying a cycle number of a cycle in which the received packets are received. As described above, neither the specification of the present invention which is designated as prior art, Traw nor their combination teach adding a meta data header to an existing header of received packets by a media storage device, a cycle mark value including a pattern used to locate cycle boundaries within the received packets and a cycle count value specifying a cycle number of a cycle in which the received packets are received. For at least these reasons, the independent claim 19 is allowable over the teachings of the specification of the present invention which is designated as prior art, Traw and their combination.

Claims 20-23 are all dependent on the independent claim 19. As discussed above, the independent claim 19 is allowable over the teachings of the specification of the present invention which is designated as prior art, Traw and their combination. Accordingly, the dependent claims 20-23 are all also allowable as being dependent on an allowable base claim.

The independent claim 24 is directed to a media storage device. The media storage device of claim 24 comprises means for interfacing configured for receiving a stream of data, thereby forming a received stream of data, and also for transmitting a retrieved stream of data, the received stream of data including packet header data, means for storing data for storing and retrieving the received stream of data, and means for processing coupled to the means for interfacing and to the means for storing for adding meta header data to the received stream of data as the received stream of data is received and providing the meta header data and the received stream of data to the means for storing for recording thereby forming a recorded stream of data, the meta header data including a cycle mark value marking cycle boundaries within the recorded stream of data. As described above, neither the specification of the present invention which is designated as prior art, Traw nor their combination teach a means for processing for adding meta header data to the received stream of data which includes packet header data, as the received stream of data is received and providing the meta header data and the received stream of data to the means for storing for recording thereby forming a recorded stream of data. For at



least these reasons, the independent claim 24 is allowable over the teachings of the specification of the present invention which is designated as prior art, Traw and their combination.

Claims 25, 26 and 29 are all dependent on the independent claim 24. As discussed above, the independent claim 24 is allowable over the teachings of the specification of the present invention which is designated as prior art, Traw and their combination. Accordingly, the dependent claims 25, 26 and 29 are all also allowable as being dependent on an allowable base claim.

The independent claim 30 is directed to a media storage device. The media storage device of claim 30 comprises an interface circuit configured to receive a stream of data, thereby forming a received stream of data, and also to transmit a retrieved stream of data, the received stream of data including packet header data, storage media configured to store and retrieve the received stream of data, and an embedded stream processor coupled to the interface circuit and to the storage media to add meta header data to the received stream of data as it is received and provide the meta header data and the received stream of data to the storage media for recording to form a recorded stream of data, the meta header data including a cycle mark value marking cycle boundaries within the recorded stream of data. As described above, neither the specification of the present invention which is designated as prior art, Traw nor their combination teach an embedded stream processor to add meta header data to the received stream of data which includes packet header data, as it is received and provide the meta header data and the received stream of data to the storage media for recording to form a recorded stream of data. For at least these reasons, the independent claim 30 is allowable over the teachings of the specification of the present invention which is designated as prior art, Traw and their combination.

Claims 31, 32 and 35 are all dependent on the independent claim 30. As discussed above, the independent claim 30 is allowable over the teachings of the specification of the present invention which is designated as prior art, Traw and their combination. Accordingly, the dependent claims 31, 32 and 35 are all also allowable as being dependent on an allowable base claim.

The independent claim 44 is directed to a method of writing data to a media storage device. The method of claim 44 comprises receiving a received packet of data to be written to

the media storage device, the received packet of data including a packet header, adding a meta header to the received packet of data thereby forming an extended packet of data, wherein the received packet of data is an isochronous packet of data received over an isochronous channel, and storing the extended packet of data onto a media within the media storage device. As described above, neither the specification of the present invention which is designated as prior art, Traw nor their combination teach adding a meta header to the received packet of data which includes a packet header, thereby forming an extended packet of data and storing the extended packet of data onto a media within the media storage device. For at least these reasons, the independent claim 44 is allowable over the teachings of the specification of the present invention which is designated as prior art, Traw and their combination.

Claims 45-49 are all dependent on the independent claim 44. As discussed above, the independent claim 44 is allowable over the teachings of the specification of the present invention which is designated as prior art, Traw and their combination. Accordingly, the dependent claims 45-49 are all also allowable as being dependent on an allowable base claim.

The independent claim 50 is directed to a method of writing data to a media storage device. The method of claim 50 comprises receiving a received packet of data to be written to the media storage device, the received packet of data including a packet header and a common isochronous packet header, adding a meta data header to the received packet of data thereby forming an extended packet of data and storing the extended packet of data onto a media within the media storage device. As described above, neither the specification of the present invention which is designated as prior art, Traw nor their combination teach adding a meta data header to a received packet that includes a packet header and a common isochronous packet header to form an extended packet of data and storing the extended packet of data onto a media within a media storage device. For at least these reasons, the independent claim 50 is allowable over the teachings of the specification of the present invention which is designated as prior art, Traw and their combination.

The independent claim 51 is directed to a media storage device. The media storage device of claim 51 comprises an interface circuit configured to receive a stream of data, thereby forming a received stream of data, and also to transmit a retrieved stream of data, storage media configured to store and retrieve the received stream of data, wherein the received stream of data

includes one or more received packets of data, each including a packet header and a common isochronous packet header, and an embedded stream processor coupled to the interface circuit and to the storage media to add a meta data header to each received packet in the received stream of data as it is received, thereby forming an extended packet of data, and provide the extended packet of data to the storage media for recording to form a recorded stream of data, the meta data header including a cycle mark value marking cycle boundaries within the recorded stream of data. As described above, neither the specification of the present invention which is designated as prior art, Traw nor their combination teach receiving a stream of data each including a packet header and adding a meta data header to each received packet in the received stream of data. For at least these reasons, the independent claim 51 is allowable over the teachings of the specification of the present invention which is designated as prior art, Traw and their combination.

Claims 14, 15, 27, 28, 33 and 34 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the AAPA in view of Traw as applied to claim 1 above, and further in view of Kuver. Claims 14 and 15 are dependent on the independent claim 8. Claims 27 and 28 are dependent on the independent claim 24. Claims 33 and 34 are dependent on the independent claim 30. As discussed above, the independent claims 8, 24 and 30 are all allowable over the teachings of the AAPA, Traw and their combination. Accordingly, the dependent claims 14, 15, 27, 28, 33 and 34 are all also allowable as being dependent on an allowable base claim.

For the reasons given above, Applicants respectfully submit that the claims are now in a condition for allowance, and allowance at an early date would be appreciated. Should the Examiner have any questions or comments, they are encouraged to call the undersigned at (408) 530-9700 to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,  
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- 20 -

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Date: 2/2/05 By: [Signature]